inventory and sends an event to an event router when an item is added to or removed from the inventory. The event router receives the event from the monitoring system and sends the event to one or more item tracking systems. The item tracking systems receive the event and update stored information about the item to reflect the event." (Column 1, lines 37-44.)

[0007] In a retail location, for example, an item tracking system may be part of an inventory management system used at a retail store, which has inventory having RFID tags or transponders. When tagged items entered or leave the store, an RFID monitoring system will note these "inventory events." Alternately, when tagged items are removed from the shelf, or are replaced on the shelf, the RFID system will record these events. Also, the item tracking system may obtain alerts when an inventory level of a certain product falls below a certain amount, indicating that the product should perhaps be replenished.

[0008] There are two types of RFID tags: passive and active. A passive tag has no power source for communications or data transmission, while an active tag has some kind of internal power source such as a battery. An active tag may also have some computing or processing capacity.

[0009] RFID tags are generally capable of being electronically initialized, and storing a digital identification code, which can be read directly from the tag using an RFID reader. Some tags are capable of holding much more information, and some are re-writable.

[0010] As far as the RFID reader, it may include a frame or housing, one or more antennas, a radiofrequency interrogator, a radiofrequency multiplexer, and a computing system. It may be provided with software of varying sophistication.

HTTPS over TCP/IP. The software protocol between the client and the server software may be SOAP, and the server may implement J2EE web services.

[0080] REMOTE (SERVER) SITE:

[0081] The remote site could be located at a site of the medical device manufacturer or another campus. Its main function is to provide centralized data repository for all local (Hospital) sites. In other words, this is the master database. In addition, the remote site provides user interface, which allows the following operations which can be executed by an administrator:

[0082] 1. View all automatically generated e-mails or alerts, warning of inventory levels below recommended levels.

[0083] 2. Generate, view and print product use or inventory reports, by local site or system-wide.

[0084] 3. Generate, view and print last-known inventory reports, per local site or system-wide.

[0085] 4. Generate, view and print summary inventory reports.

[0086] 5. Generate, view and print summary inventory usage reports.

[0087] 6. Generate, view and print product expiration reports.

[0088] 7. Generate, view and print product history reports.

[0089] 8. Generate an interface file which can be used for a data exchange with the billing system of the medical device manufacturer.

[0090] 9. Generate an interface file that can be used with the order management system of the medical device manufacturer. This feature can allow an administrator to communicate with the transponders on the medical device inventory, indicating expiration status as well as multiple other events. In effect, the inventory can then alert against its own use, or notify the master database to perform immediate replenishment.

[00104] The handheld executes the software, which controls an RFID interrogator, which may be built into the handheld device. It also may provide a graphical interface to allow the following operations:

[00105] 1. Selecting the location at which inventory is being taken from a list of known locations. If the location is new, the software may allow it to be added to the list of locations. For local sites or hospitals with multiple locations, an RFID transponder may identify each location uniquely.

[00106] 2. Start or stop an RFID scanning cycle.

[00107] 3. Accept or cancel the results of an RFID scanning cycle.

[00108] 4. Establish dial-up or wireless connection to the remote site and upload inventory levels and inventory events to the master database.

[00109] Any data replication with the master database may be done via a web service in the same manner as with the smart shelf unit. In other words, the handheld system may be programmed to register inventory and inventory events as are possible with the smart shelf unit.

[00110] OPERATIONAL SCENARIOS:

[00111] The following is a description of one possible method of using an RFID system to manage medical device inventory:

[00112] 1. Product is packaged, labeled and affixed with a RFID transponder at a manufacturing site of choice. The data transfixed on the transponder and associated with the respective Product is communicated to the remote site and the master database.

[00113] 2. Product is shipped to a Local Site (Hospital). If the local site is equipped with RFID shelf, and that shelf is configured to automatically scan for inventory, it